



June 14, 1978
NUMBER 4540.5

ATSD(AE)

Department of Defense Directive

SUBJECT Movement of Nuclear Weapons by Noncombat Delivery Vehicles

References: (a) DoD Directive 4540.3, "Logistic Movement of Nuclear Weapons," December 19, 1972 (hereby canceled)
(b) DoD Instruction 4540.4, "Safety Standards and Procedures for the Logistic Movement of Nuclear Weapons," December 20, 1972 (hereby canceled)
(c) through (e) (see enclosure 1)

A. PURPOSE

This directive:

1. Establishes the policy and criteria for the movement of, nuclear weapons and nuclear components, except Limited Life Components (LLCs), by noncombat delivery vehicles and the minimum safety standards required during such movement.
2. Assigns responsibility for the publication of joint manuals prescribing (a) uniform standards and criteria for inspections prior to nuclear weapon movement missions; and (b) nuclear weapon custody and accountability procedures.
3. Incorporates current procedures of references (a) and (b), which are hereby canceled.

B. APPLICABILITY AND SCOPE

1. The provisions of this directive apply to the Office of the Secretary of Defense, the Military Departments, the Organization of the Joint Chiefs of Staff, the Unified and Specified Commands, and to the Defense Agencies (referred to as "DoD Components") supporting or having responsibility for the movement of nuclear weapons.

2. If there are differences between the minimum standards and criteria set forth here and those in other approved issuances, the more stringent standards and criteria shall apply.

3. This Directive does not abrogate or abridge the authority or responsibility of a commander to deviate in an emergency from the policies and criteria established here; however, this provision does not apply to the requirement for maintaining U.S. custody of U.S. nuclear weapons and components.

C. DEFINITIONS

Terms used in this directive are defined in enclosure 2.

D. POLICY AND PROCEDURES

1. Nuclear weapons require special protection because of their military importance, their destructive power, their cost, and the consequences of an unauthorized or accidental nuclear or **high-**explosive detonation. They must be protected against the risks and threats inherent in their environment; and must not be subjected to adverse environments, except when such exposure is dictated by operational requirements. The conservation of nuclear weapons as a national resource and the safety of the public, operating personnel, and property are of paramount importance during movement of nuclear weapons.

2. Detailed security requirements for logistic movement of nuclear weapons and nuclear components are contained in DoD Directive 5210.41 (reference (c)) and DoD, Manual 5210.41-M (reference (d)).

3. The criteria for the movement of nuclear weapons and nuclear components by noncombat delivery vehicles are set forth in enclosure 3.

4. Minimum safety standards for the movement of nuclear weapons and nuclear components are set forth in enclosure 4.

5. When units have a movement mission, inspections or staff visits scheduled by the unified and specified commands, the Military Departments, or the Defense Nuclear Agency will include the inspection or review of systems, plans, and procedures for the movement of nuclear weapons. (See E1.)

E. RESPONSIBILITIES

In coordination with the Assistant to the Secretary of Defense (Atomic Energy), the Joint Chiefs of Staff shall develop, coordinate, publish, and maintain:

1. A manual prescribing uniform standards and criteria for the inspections described in section D.5.

2. A manual specifying procedures for nuclear weapon custody and accountability. (See section D., enclosure 3.)

F. EFFECTIVE DATE AND IMPLEMENTATION

This Directive is effective immediately. Forward one copy of each implementing document to the Assistant to the Secretary of Defense (Atomic Energy) within 90 days.



C. W. DUNCAN, Jr.
Deputy Secretary of Defense

Enclosures - 4

1. References
2. Definitions
3. Criteria
4. Safety Standards

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REFERENCES, continued

- (c) DoD Directive 5210.41, "***security*** Criteria and Standards for Protecting ***Nuclear*** Weapons," September 10, **1976**
- (d) DoD Manual 5210.41-M, "Nuclear Weapon Security Manual," May 1, 1977
- (e) DoD Directive 5030.15, "Safety Studies and Reviews of Nuclear Weapons Systems," August 8, 1974

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DEFINITIONS

A. Nuclear Weapon Movement. The transport of nuclear weapons by any appropriate noncombat delivery vehicle.

1. Logistic Movement. All movement of nuclear weapons and nuclear components by a noncombat vehicle, from the secure environment of a storage/alert area, not conducted in response to an increased readiness condition or wartime emergency plans.

2. Tactical Movement. That movement of nuclear weapons or nuclear components made to support emergency plans or an alert posture during an increased readiness condition which authorizes a unit to remove nuclear weapons from **their** storage configuration in preparation for deployment to other locations.

B. Noncombat Delivery Vehicle. Any vehicle used for the movement of nuclear weapons, but not subject to the specific nuclear safety rules approved by the Secretary of Defense in accordance with DoD Directive 5030.15 (reference.(e)).

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C. Logistic System. The organizations, vehicles, and support equipment employed for the loading, movement, and transfer of nuclear weapons and nuclear components (except LLCs), explicitly excluding nuclear-capable combat delivery vehicles.

D. Heavily Populated Area. Any urban/industrial area whose size would preclude aircraft in an emergency from reaching a suitable emergency landing area from any position enroute at the altitudes being flown by the aircraft.

E. Safety Certification of Equipment and Procedures. A determination by the applicable Military Departments that equipment and/or procedures meet required nuclear safety criteria and are approved for use with a nuclear weapon.

CRITERIA FOR MOVEMENT OF NUCLEAR WEAPONS
AND NUCLEAR COMPONENTS

A. Movement of nuclear weapons shall be kept to the minimum consistent with operational requirements **and** shall conform with the policies and guidance set forth here.

B. Nuclear weapons shall be moved by the safest and most secure means and over the safest and most secure routes.

1. Military air transport is the preferred mode for logistic movement of nuclear weapons between storage locations. Such movement shall be conducted utilizing U.S. military transport aircraft, including helicopters.

2. Normally, waterborne movement of nuclear weapons shall be on U.S. Navy ships or craft or U.S. national civil-service-manned ships of the Military Sealift Command (**MSC**), equipped for the purpose. If necessary to meet urgent operational or emergency evacuation **requirements**, the commander of the appropriate unified or specified command may authorize the use of other U.S. military or U.S.-manned MSC ships to transport weapons under U.S. military custody. At ports, nuclear weapons shall be loaded and unloaded only through military terminal facilities.

3. Interbase rail shipments of nuclear weapons are one of the least desirable modes of logistic movement and shall not be made unless the commander of the appropriate unified or specified command determines that an urgent operational requirement justifies such a **movement**. U.S. military custody is required for all rail shipments.

4. Motor vehicles may be used for the logistic movement of nuclear weapons when the head of a DoD Component or a unified or specified commander determines their use to be safer or more practical than use of U.S. military aircraft. This determination must be in writing, and the authority to so determine may not be delegated. In such cases, U.S. military custody shall be maintained at all times.

C. Programing and siting criteria for nuclear weapon units shall include a review of proposed plans to assure that the movement of nuclear weapons to and from the units can be accomplished safely and that the vulnerability of the weapons to security and espionage threats is minimized. In addition, commanders shall periodically review movement plans and procedures in conjunction with current intelligence data and threat analyses to ascertain that weapon movement security and safety standards are being met.

D. Procedures for transfer of custody of nuclear weapons, including a courier receipt system, shall be developed and included in a joint publication to standardize custody transfer procedures between all

elements within the Department of Defense and, as far as possible, to align them with those used jointly by the Department of Defense and Department of Energy. Minimum documentation shall be used for the purpose of property accountability, custody receipting, and shipping transactions.

E. The criteria and standards prescribed for logistic movement of nuclear weapons and nuclear components will be adhered to when actual weapons are moved during exercises and under simulated tactical conditions.

SAFETY STANDARDS

A. Each DoD Component shall develop and implement detailed standards and procedures appropriate to its nuclear weapon movement operations. As a minimum, the following standards and procedures shall apply:

1. The DoD Component shall provide essential information about the mission and the cargo being carried to personnel participating in movement operations.

2. Each member of a movement mission shall know his specific duties and responsibilities, including those relative to the safety and security of the cargo, and procedures established to cope with enroute emergencies, such as accidents, incidents, and attempted hijacking.

3. U.S. and non-U.S. , noncombat delivery vehicle support equipment and procedures shall receive a safety certification prior to being authorized for nuclear weapons handling operations. Safety certification criteria and procedures shall be developed by the Military Departments.

4. A safety certification of loading and tiedown procedures for nuclear weapons on all noncombat delivery vehicles used for movement of nuclear weapons shall be required. These procedures and the safety certification shall be completed prior to the use of the vehicles for nuclear weapon movement.

5. Safety standards shall be specified and adhered to for those vehicles and ancillary equipment used for the movement of nuclear weapons. Maintenance authorized on vehicles and ancillary equipment during transport of nuclear weapons shall be specified.

6. During any movement of a nuclear weapon where the weapon is removed from the direct control of the assigned custodian, the responsible commander shall assign and designate in writing a courier, who shall be responsible for custody, safety, and security during the movement. For logistic movements, the designated courier shall be a commissioned officer or warrant officer.

7. All vehicles and craft to be loaded shall be searched and sanitized by removing all hazardous materials and all personnel not essential to the mission, and entry controls shall be established.

8. Except for momentary stops, an exclusion area will be established around weapons carriers during all stops.

B. In addition to provisions of section A., this enclosure, the following standards for movement of weapons by U.S. transport aircraft (including helicopters) shall apply:

1. In order to maintain the high proficiency and professionalism needed in safe and secure airlift movements, the number of different **aircrews**, couriers, and guards shall be kept to the minimum necessary for effective operations.

2. DoD Component mission planning, crew briefing and enroute procedures shall ensure that:

a. Concerned organizations at enroute and destination bases are informed of the estimated time of arrival, the nature of the cargo aboard, and the requirements for priority ground servicing, maintenance, and airspace handling.

b. Destination bases and any bases anticipated for use enroute have adequate holding areas and properly certified support equipment, as required.

c. Minimum essential firefighting equipment and communications facilities are specified and available for loading and unloading operations.

d. Inflight and ground security standards are prescribed, and met by aircrews, prior to obtaining local security support for the aircraft and cargo.

e. National Guard and Reserve **aircrews** are not used for logistic movement of nuclear weapons without the specific prior approval of the Secretary of Defense. In such cases, U.S. military custody is required.

f. Logistic movement aircraft carrying nuclear weapons are prohibited from approaching within an unsafe distance of unfriendly borders. In addition, positive measures shall be developed to prevent overflight of or landing in an unfriendly territory or in countries where these actions are prohibited. The terms "unfriendly border," "unsafe distance" and "unfriendly territory" shall be defined in coordination with the Military Departments and shall be set forth in the U.S. Air Force Special Weapons Overflight Guide (SWOG). The SWOG shall be applicable to **all** elements of the Department of Defense. The U.S. Air Force shall keep the SWOG current, coordinate changes, and make it available to other DoD Components, as required.

g. Any aircraft transporting nuclear weapons avoids overflight of heavily populated areas whenever possible. Approaches, landings, or take-off tracks are excluded from this limitation.

h. Aircrews are knowledgeable of special weather limitations and hazards to be avoided for nuclear weapon movements.

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i. The minimum essential number of qualified aircrew members is specified, and must be available, for the type of aircraft and movement mission to be performed (e.g., within CONUS, from CONUS to overseas, in proximity of unfriendly borders, etc.).

j. Minimum essential navigation and communication equipment in the aircraft and enroute is specified, available, and operable or the flight is terminated.

k. Loading and unloading ~~crews~~ use standard procedures established for aircraft loading and unloading operations. The procedures shall include instructions for mixed loads consisting of nuclear **weapons/nuclear** components and nonnuclear compatible opportune cargo. Aircraft shall be loaded in a manner to permit offload or inflight jettison of opportune cargo without special movement or shifting of nuclear weapons. Nuclear weapons and major assemblies shall be jettisoned from transporting aircraft only in accordance with the provisions of the SWOG.

3. Aircraft cargo space is used to the fullest extent consistent with safety and security requirements of the nuclear weapon/component cargo. To the extent practicable and within allowable safety limits, nuclear **weapon/component** shipments shall be combined and, when **space** is available, compatible opportune cargo shall be carried. However, no additional landings with nuclear weapons aboard shall be required for the purpose of airlifting opportune cargo on nuclear weapon movement missions.

C. In addition to the requirements of section A, this enclosure, DoD Components shall develop and implement procedures for the movement of nuclear weapons by motor vehicle to assure that:

1. Concerned organizations at the destination are aware of the estimated time of arrival and the nature of the cargo.

2. Adequate and properly certified handling/support equipment is available at the destination.

3. Adequate firefighting equipment is prescribed and available throughout the weapon movement operation.

4. Security support is obtained for the nuclear weapon cargo at enroute stops and additional security support enroute, if required.

5. In addition to the driver, an armed escort rides in the cab of each motor vehicle carrying or towing a nuclear weapon. Such a vehicle, or convoy of vehicles, shall be preceded and followed by at least one security vehicle. Each security vehicle shall carry at least one armed guard in addition to the driver.

6. Movement routes are swept by a radio-equipped vehicle sufficiently in advance of the weapon convoy to decrease the possibility of involvement with traffic obstructions, civil disturbances, or other hazards to safe movement.

7. During logistic movements, communications requirements are established to provide **intra-convoy** voice radio communications between all vehicles of the convoy, and between the convoy and a central control center.

D. Safety training for personnel involved in movement operations, including aircrew and ship crew members, couriers, handling personnel, guards and vehicle drivers, shall be adequate to assure knowledge of their responsibilities and proficiency in the procedures and practices necessary for safe and secure movement missions. Training requirements for logistic movement personnel shall include both formal instruction and practical experience. The Military Departments shall provide for the designation, training, and certification of proficiency of all personnel prior to their being assigned duties on nuclear weapon/component logistic movement missions. Additional personnel may accompany logistic movements for training purposes prior to proficiency certification.